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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/892,187	06/26/2001	Robert C. Qiu	4648-105 US	1738

7590 05/09/2005

Rita M. Wisor
C/O Blakely, Sokoloff, Taylor & Zafman, LLP
12400 Wishire Boulevard, Seventh Floor
Los Angeles, CA 90025

EXAMINER

GESESSE, TILAHUN

ART UNIT	PAPER NUMBER
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2684

DATE MAILED: 05/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/892,187	QIU, ROBERT C.	
	Examiner	Art Unit	
	Tilahun B Gesesse	2684	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/29/02</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This is in response to applicant argument filed November 12, 2004, in which claims 1 through 22 are pending .

Response to Arguments

2. Applicant's arguments with respect to claims 1-22 have been considered but are moot in view of the new ground(s) of rejection.

3. Applicant's arguments, see page 7-8 , filed 11/12/04, with respect to the rejection(s)of claim(s) 1-8 and 11-19 under 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of IEEE signal processing magazine (2000IEEE) may 2000 and Wu et al (US 6,426,971) "WU".

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-6,9-10,121-17,20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hilley et al "Hilley" (may 2000) in view of Wu (US 6,426,,971).

Regarding claim 1, Hilley discloses a method for long long-range prediction of fading signals for high-speed downlink packet access (see title of Hilley IEEE signal processing magazine, may'00)

Hilley discloses generating a prediction of fast fading (page 62 first paragraph), Hilley teaches selecting parameters (select a code with low rate when the channel is going into a fading and a high rate code when the channel becomes stronger (see page 66, paragraph 3)

Hilley does not teach transmitter is between base station and mobile unit. However, Wu teaches transmitter parameters as a function of the fast fading and between base station and mobile unit (column 9, lines 14-column 10 lines 20 and figure 2).

Therefore, it would have been obvious to an artisan of ordinary skill in the field at the time of the invention was made to select transmitting parameters, as evidenced by Wu, in order to minimize flat fading communication channels, and data errors that occurs during transmission between base and mobile units.

Regarding claims 2-5, 13-16, Hilley teaches the transmitter parameters. includes coding rate , modulation level , power allocation, and multi code (page 65 paragraph 1).

Regarding claims 6,17 Hilley discloses the transmitter parameters includes number of rate matching bits required to fill a frame (page 63 paragraph 1).

Regarding claim 9 and 20, Hilley teaches generating a prediction of fast users maximum entropy method (page 63 paragraph 2) .

Regarding claims 10, 21, Hilley discloses uses Root-MUSIC (page 63, paragraph 3)

Regarding claims 11,22, Hilley discloses uses MMSB method (page 67 paragraph 3).

Regarding claim 12, it is apparatus claim which corresponds to method claim 1, above. Therefore, it is analyzed and rejected for the same reason as set forth in the claim.

6. Claims 7-8 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hilley in view of Wu as applied to claims 1-6,9-17,20-22 above, and further in view of Ejzak (US 6,389,066).

Regarding claim 7-8 and 18-19, Hilley in view of Wu do not expressly teach the transmitter parameters include ARQ and the cell site selection. However, Ejzak, in a fading predicting technique teaches ARQ and cell selection during downlink and uplink transmission (see figure 3, column 2, lines 20-45 and column 4, lines 1-27). It would have been obvious to an artisan of ordinary skill in the art at the time of the invention was made to select cell and to utilize ARQ parameter, as evidenced by Ejzak, in order to adjust code modulating to adapt to the channel condition such as fading.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Millar (US 4,593,398) discloses an adaptive differential pulse code modulation system, with adaptive prediction, has a transmitter, which subtract the output of its

prediction from the original input signal and transmits a numeric representation of the quantized difference (abstract).

Yamano et al (US 6,011,056) discloses provide a radio communication system capable of following change in fading between base station and mobile station (see figure 1 and abstract).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tilahun B Gesesse whose telephone number is 571-272-7879. The examiner can normally be reached on flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 571-272-7882. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tilahun B. Gesesse 4/26/05

**TILAHUN GESESSE
PRIMARY EXAMINER**